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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/635,205	08/09/2000	Tetsuya Utsui	P19485	5769

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EXAMINER

CHERRY, EUNCHAP

ART UNIT PAPER NUMBER

2872

DATE MAILED: 11/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/635,205

Applicant(s)

UTSUI ET AL.

Examiner

EUNCHA P. CHERRY

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of group I in Paper No. 9 is acknowledged. The traversal is on the ground(s) that applicant believes that it would be vastly more efficient to conduct the examination of all of the claims 1-13 in a single application, because claim 8 does not recite the specific tilt angles of the reflecting surfaces and additionally, the combination (i.e. claim 11) is directed to an optical scanning system. This is not found persuasive because of the following reasons.

First of all, applicant assumes there is a mistake in grouping claims, such as claim 8 should have been included in group II. This is not a correct assumption. Claim 8 includes the exactly same details of group I. However, claim 9 requires the specific tilt angles of the reflecting surfaces, which has not been in any of claims in group I. There may be different rejections for groups I and II, but the details are the same, which cannot be separated as different groups.

Secondly, claim 11 does not have details of claim 9, such as the smallest tilt angle has tilt angle greater by a

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predetermined amount than that of the reflecting surface adjacent thereto in a predetermined direction of rotation.

Applicant alleges there would not be a serious burden on the examiner in examining all of these claims together. Examiner respectfully disagrees. Searches of each group would put serious burden.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 9-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected groups, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 9.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-  
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claim 8 is rejected under 35 U.S.C. 102(e) as being anticipated by Wang.

Wang discloses a polygon mirror comprising a plurality of reflecting surfaces around its center axis (Fig. 1, 102), the reflecting surfaces differing from each other in tilt angle with respect to the center axis, the polygon mirror rotating about the center axis (see 102).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al in view of Wang.

Swanson et al discloses an endoscope system (Fig. 1E) comprising:

a first waveguide (31);

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a second waveguide (41);

an optical coupler, which optically couples the waveguide to each other (21);

a low-coherent light source (10 and column 9, lines 34-40) arranged on a proximal end of either one of the first and second waveguides, the low-coherent light source emitting low-coherent light to be incident on this waveguide;

a polygon mirror (50) having a plurality of reflecting surfaces around its center axis (51, 52 and also see Figs. 13 A and 13B);

a supporting mechanism which supports the polygon mirror and rotates it about the center axis (inherent);

an incident optical member which guides low-coherent light emitted from a distal end of the first waveguide to a reflecting surface of the polygon mirror (Fig. 13A optical element prior art to 50);

an emission optical element (Fig. 13A, 510);

a reflecting member (520) which reflects the low-coherent light emitted from a distal end of the second waveguide so that the low-coherent light returns into the second waveguide as reference light (column 23, lines 30-37);

optical path length adjusting mechanism (see Fig. 1E, near 30) which makes a relative change between length of an optical

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path extending from the optical coupler to an object (25)  
through the first waveguide (31);

a photodetector arranged on a proximal end of the other of  
the first and second waveguides (150);

signal processor generating a tomographic image of the  
object (column 1, lines 10-11);

the optical path length adjusting mechanism moves the  
reflecting member so as to approach or recede from the distal  
end of the second waveguide (column 14, lines 1-39);

an illumination optical system (10);

an objective optical system (lenses in 30);

a pick-up device (30); and

display means (110).

Swanson et al does not disclose the polygon mirror having  
the reflecting surfaces differing from one another in tilt angle  
with respect to the center axis.

Wang et al discloses the polygon mirror having the  
reflecting surfaces differing from one another in tilt angle  
with respect to the center axis (see Fig. 1, 102).

It would have been obvious to one of ordinary skill in the  
art to make reflecting surfaces of the polygon mirror to have  
different tilt angle with respect to the center axis for the

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purpose of enhancing the image quality by capturing any light that is incident at angle.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al in view of Wang as applied to claims above, and further in view of Fercher et al.

Swanson et al discloses the claimed invention as set forth above except the light source includes a super-luminescent diode. Fercher et al discloses a super-luminescent diode as a light source in an optical coherence tomography system. It would have been obvious to one of ordinary skill in the art to make the light source of Swanson et al in view of Wang to include a super-luminescent for the purpose of creating a light having low-coherence because it is a well-known light source for endoscope.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al in view of Wang as applied to claims above, and further in view of JP 7-155291.

Swanson et al discloses the claimed invention as set forth above except the light switching mechanism which select either the visible light or the excited light. JP 7-155291 discloses the light switching mechanism which select either the visible light or the excited light. It would have been obvious to one



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of ordinary skill in the art to add the light switching mechanism which select either the visible light or the excited light for the purpose of using the endoscope for both an endoscope image and a fluorescence image.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUNCHA P. CHERRY whose telephone number is 703-305-0997. The examiner can normally be reached on M-F 6:30-4:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CASSANDRA SPYROU can be reached on 703-308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Euncha Cherry  
November 26, 2002